

IBM®

QUIKTRAN

QUIKTRAN
for the
IBM 7040/7044
remote
computing
system



IBM

IBM



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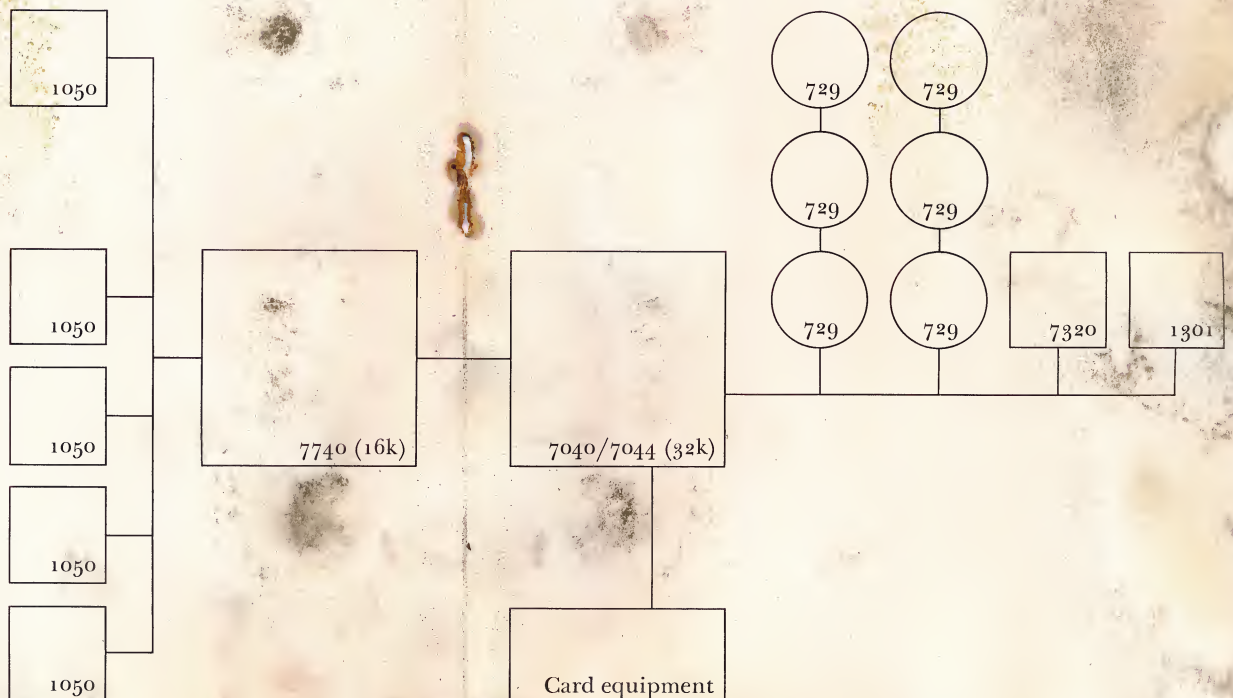
The IBM 7040/7044 Remote Computing System

QUIKTRAN has been constructed for use with the IBM 7040/7044 Data Processing System. This remote computing system includes the following components:

The IBM 1050 Communications System with printer-keyboard is used as the terminal device at the user's location. A card reader/punch may be added if needed. The terminal is linked by telephone lines to an IBM 7740 Communications Control System at the computer center.

The IBM 7740 Communications Control System is used for communication processing and message control. It continuously monitors incoming lines and relays programming statements from each line to the computer.

The IBM 7040/7044 Data Processing System, under control of the QUIKTRAN program stored in its memory, compiles, checks or executes each statement according to instructions from the sending location. Lengthy jobs, which must be processed in their entirety rather than statement-by-statement, can be placed temporarily in disk storage by the 7740 until the computer is free to handle them.



The computer system is divided into sub-systems:

The scheduler controls and maintains system operation and maintains rapid and consistent response times at all terminals; *The translator* transforms the source language into an efficient equivalent internal form; *The interpreter* performs the execution; *The process control program* coordinates the activities of the translator and the interpreter; *The input/output control system* performs all I/O functions; *The exchange program* runs the communications control system.

The IBM 1301 Disk Storage is available for user program library storage.

The IBM 7320 Drum Storage acts as a temporary working storage for users' programs.

The IBM Magnetic Tape Units are used for logging transactions and for maintaining normal computer capabilities.

```
101. = NUMBER = 2+2
101. -READY NUMBER= 4
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```
101. = NUMBER = 12/2
101. -READY NUMBER= 6
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```
101. = N = SQRT(64.)
101. -READY N= 8
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```
101. -READY PROGRAM SAMPLE
102. +READY DIMENSION ZPLOT(52), TABLE(500)
103. +READY X=0
104. +READY Y=1.
105. +READY I=1
106. +READY READ 101, DELX, CHAR, ZPLOT
107. +READY 101 FORMAT (F7.4, 53A1)
108. +READY PRINT 102
109. +READY 102 FORMAT (5X, 1HX, 7X, 1HY)
110. +READY 2 TABLE (I) = X
111. +READY TABLE (I+1) =Y
112. +READY 1 PRINT 103, X, Y
113. +READY 103 FORMAT(2X, F7.4, F8.5)
114. +READY IF (X-1.) 5, 3, 3
115. +READY 5 I=I+2
116. +READY X=X+DELX
117. +READY DELY =X+Y+DELX
118. +READY Y=Y+DELY
119. +READY GOAT 2
119. +ERROR STATEMENT NOT IN LANGUAGE
119. +READY GO TO 2
120. +READY 3 DO 4 J= 1, I, 2
121. +READY X= TABLE(J)
122. +READY K=1. +((TABLE(J+1)-TABLE(2)))/(TABLE (I+1)-TABLE (2))+50.)
123. +READY ZPLOT(K) = CHAR
124. +READY PRINT 101, X, ZPLOT
125. +READY 4 ZPLOT (K)=ZPLOT (K+1)
126. +READY STOP77
127. +READY END
```



Quiktran is the key The key to this new approach to remote computing—man/machine interaction of statement and instantaneous response—is QUIKTRAN, a new programming system for the IBM 7040/7044 Remote Computing System. QUIKTRAN makes computer time-sharing a practical reality. Through the use of this unique programming system, up to 40 users at remote locations can utilize *concurrently* the centrally located computer for problem solution and program testing.

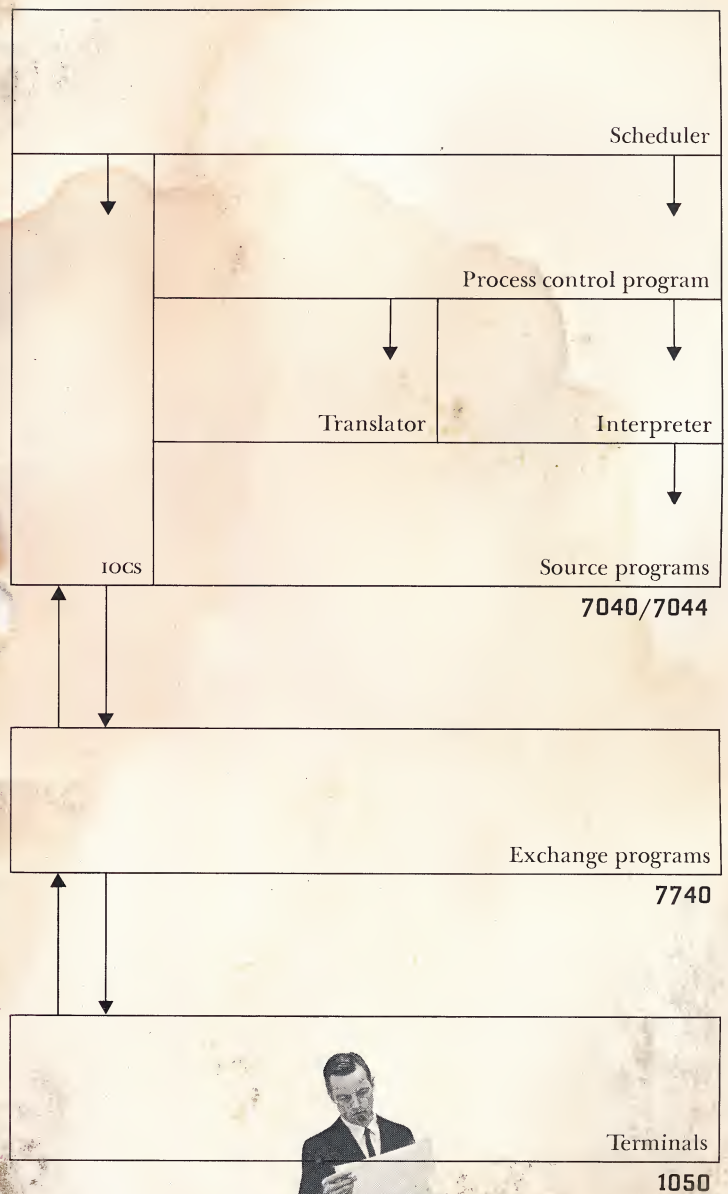
Written in the familiar FORTRAN-like language, QUIKTRAN contains versatile operating, testing and debugging statements which provide the user with easily learned means for solving problems and developing programs on a statement-by-statement basis. The time-sharing environment of this remote system permits the user to make *immediate* changes or alterations to these statements. As a result of this man/machine interaction, the scientist, engineer or businessman can rapidly exercise his judgment and experience in the formulation and testing of solutions to problems.

Source language is sole language All communications between man and machines are expressed in the same problem-oriented language. Diagnostic error messages and debugging information are printed in QUIKTRAN, the source language. Therefore, there is no need for the user to learn machine or assembly language.

The Quiktran structure The powerful operative and diagnostic structure of QUIKTRAN is reflected in its sizable collection of operating statements used to build, manipulate, test and debug programs.

Control statements control the user's terminal and his program. *Modification statements* alter and modify the user's formulas or program. *Test statements* test and debug the user's program. *Display statements* selectively display intermediate or final results. *Input/output statements* select the input or output unit...and also are used to specify or change output formats.

The QUIKTRAN capability makes it simple for the user to execute a single statement or sequence of statements. The user can add, delete or change statements as desired, list his program to clarify the most recent version, or interrupt execution at any time.



More creative power to you QUIKTRAN for the IBM 7040/7044 offers a powerful tool to remote computer users. A system that utilizes source language debugging for solving problems in a time-sharing environment provides significant advantages to the sophisticated programmer *and* to the occasional programmer interested in the shortest procedural route to solving an application problem. The scientist, engineer or businessman can see the results of his calculations immediately...can experiment with his approaches and interject his own judgment and decision-power on the spot...can significantly increase his creative efforts. QUIKTRAN, the IBM 7040/7044 Remote Computing System, provides the additive to boost his creative power.

Remote computing at hand For the remote computer user—response time in seconds...solutions in minutes. Scientists, engineers and businessmen now have a powerful problem-solving capability literally at their fingertips. Regardless of geographical location, the remote user can have direct, sustained access to a central computer...without leaving his office or laboratory...without enduring prolonged periods of delay in computer response. At his remote terminal the user keys the statements or requests for information to the computer through his keyboard and receives an immediate response on the printer. No other human intervention is necessary because the user has computer accessibility at any time for any duration. Communication between the man and his computer is over regular telephone lines and, in effect, his terminal is his computer since he sees only the keyboard and printer.

